Public Comment Responsiveness Summary

Hawaii's 2002 Clean Water Act Section 303(d) Waterbody List
Hawaii State Department of Health (DOH)

November 20, 2002

General Comments::

Several commenters expressed concern that the State's proposed listing methodology is arbitrary or inconsistent with regulatory requirements. Specifically, several comments challenged the use of:

- Minimum sample sizes;
- Minimum percentage exceedance rates to determine impairment; and
- Quality assurance/quality control procedures to ensure that data are reliable and representative of receiving water conditions.

EPA assessment and listing guidance documents specifically recommend that states develop listing methodologies based on accepted scientific principles that result in defensible listing decisions (see EPA, 1997, EPA, 2001, and EPA, 2002). EPA endorses the use of rigorous QA/QC procedures, including definition of minimum sample sizes needed to assess waters, as part of state assessment methodologies (see EPA, 1997 and EPA, 2002). With respect to minimum sample sizes, DOH had to balance the desire for statistical rigor in the assessment process (which would have entailed setting higher minimum sample sizes) with the requirement to assess waters for which limited data were available. It is reasonable for the DOH to set minimum sample sizes by exercising professional judgment with respect to these competing goals. EPA also endorses the application of minimum percentage exceedance rates to determine whether water quality standards are exceeded for particular waters (see EPA, 1997 and EPA, 2002). Moreover, the state methodology is consistent with the recommendations of the National Research Council provided in its technical review of the CWA §303(d) listing process (see NRC, 2001). Hawaii's assessment methodology is fully consistent with EPA's national assessment and listing guidance; therefore, we disagree that the methodology is arbitrary or inconsistent with legal requirements.

Specific Comments to EPA on November 15, 2001 Revised 1998 303(d) List

Commenter 1: Kapua Sproat, EarthJustice, on behalf of Hihiwai Stream Restoration Coalition and the Center for Biological Diversity, Letter dated September 30, 2002

Comment 1.1 *"At a minimum, any waterbody that currently violates or is threatened with slipping below water quality standards meets the listing criterion of section 303(d)(1)(A) and must be included on Hawai'i's 303(d) list."*

Response: DOH has only listed waters that, through application of the listing/delisting criteria (see Impaired Waters Report, Appendix A) and standard statistical methods of analysis, show exceedances of the Water Quality Standards. This is the process by which violations of Hawaii's standards have been defined by both the State and EPA; it conforms to the general requirements in CWA §303(d)(1)(A) and provides an organizational framework for assembling and analyzing data and other information. Although EPA's Integrated Report Guidance specifies that states should consider listing those "threatened" waters which are expected to be in nonattainment within the next listing cycle (EPA, 2001), neither the State's own analysis nor the commenter's input identified any waters currently meeting standards but which are expected to go out of attainment within the next listing cycle (currently 2 years).

Comment 1.2 *"Despite Clean Water Act section 303(d)'s clear mandate, DOH failed to include on its draft list numerous waters for which available data reveal water quality standard violations."*

Response: Exceedances are not based on single samples. In order to account for environmental variability, most of the numeric Water Quality Criteria in HAR 11-54 are based on geometric mean values of a sample set. DOH has taken a similar approach with respect to the narrative standards; by requiring sampling to be conducted at least 3 times, variations across wet and dry season conditions can be incorporated into the decision-making process.

Comment 1.3 *"While the Coalition and the Center commend DOH for using the 2002 303(d) listing process to help identify waters that require additional monitoring…, monitoring is no substitute for identifying a waterbody as a water quality limited segment."*

Response: Monitoring is only an alternative when insufficient data are available for making a listing decision. Please see Response 1.2 for explanation of the statistical format of Hawaii's water quality criteria and the corresponding need for minimum sample sizes.

Comment 1.4 *"Because appendix C fails to separate the waters by island or indicate whether such water is a stream or coastal area, it is difficult to determine which water is listed, especially in instances where streams and coastal areas share the same name."*

Response: The coding system identifies the location of the streams based on the Hawaii Stream Assessment (COWRM and NPS 1990); for example, the first number in the code indicates the island, i.e. "2" = Kauai. DOH will clarify how to use these codes within our document and add additional clarification on the locations of coastal areas.

Comment 1.5 *"Clean Water Act section 303(D)(1)(A) does not authorize delisting. Therefore, we object to DOH's delisting criteria as well as the delisting of all WQLSs and parameters, including Banyans Beach and Wailuku Stream…Delisting is attempted even in instances were DOH has evidence of water quality violations."*

Response: The Clean Water Act does not expressly address the "delisting" process nor does it prohibit it; however, 40 CFR 130.7(b)(6)(iv) states that "**Upon request** by the Regional Administrator, each State must demonstrate good cause for not including a water or waters on the list." As for attempts to delist where DOH has evidence of water quality violations, DOH applied the listing/delisting criteria prior to making all listing/delisting decisions. Please note that, even with a sample size of ten, there will be instances where inter-annual variability will cause sample means to vary above and below a water quality criterion, with the result that a few waterbodies will move on or off the List over time. As additional data are obtained from State surface waters, these variations will converge to a long-term average, which will indicate if these sites are chronically polluted or not (also refer to Response 1.2).

Comment 1.6 *"DOH failed to consider all available data."*

Response: DOH disagrees that it "failed to consider all available data."

All biological assessments for which we had the underlying data were evaluated against the listing criteria. Those assessments for which DOH could not obtain the data, even after multiple attempts to contact the author, were compiled for future consideration when the data become readily available.

All data from USGS that met the listing/delisting criteria, including photographic and written site documentation, were considered for listing/delisting decisions. DOH will work with USGS to obtain documentation for data on their NWISWeb to be used in future listing/delisting decisions. DOH's understanding was that this website was still under development during our listing process. Data on this particular system are much more difficult to obtain and interpret than that found on the NAWQA website, particularly with respect to metadata.

After initially requesting any data that would likely meet 303(d) listing/delisting criteria from the Enforcement Section of DOH Clean Water Branch (CWB), Environmental Planning Office staff specifically requested data from the Barber's Point Notice of Violation (NFV) at the behest of EPA. At this time, Environmental Planning Office (EPO) staff again requested any data that could meet listing/delisting criteria, and no further NFVs were supplied. In accordance with established State criteria and State water quality standards, listing shall not be based on a single sampling event (see Response 1.2).

DOH made an effort to contact all known sources of existing and readily available information. Data from "waters identified by the State as impaired or threatened in a nonpoint assessment submitted under section 319 of the CWA or in any updates of the assessment" (40CFR § 130.7(b)(5)(iv) were included in the listing process because both the CWB Polluted Runoff Control Section and EPO utilize the same data, collected by the CWB, Monitoring Section. The commenter did not identify existing and readily available data or information sources that the State did not consider.

Comment 1.7 *"Hawai'i's 2002 draft list is under-inclusive because, in an effort to avoid listing, DOH employed unlawful and arbitrary criteria to exclude data evidencing water quality violations."*

> ***Response:*** DOH disagrees that the draft list is "under-inclusive" and that DOH in any way made an effort to avoid listing where there was clear evidence of water quality "violations." All waters that met priority 1 & 2 listing criteria were listed; waters with insufficient data for making listing/delisting decisions were compiled for more monitoring. QA/QC and site descriptions are just as integral to decision-making as the numeric data, and must be provided as context for numeric data. All readily available data sources were utilized for listing/delisting decisions if they met systematic criteria developed by DOH to ensure that decision-making was based on data of known quality and minimum acceptable quantity. The commenter identified no specific decision criteria of concern nor any examples where their application resulted in decisions not to include impaired waters (see general comments, page 1).

Comment 1.8 *"The Coalition and the Center remind DOH that the Hawai'i Supreme Court has strongly reaffirmed the public trust doctrine, which provides that <u>all</u> of Hawai'i's waters are held by the State in trust for its people."*

> ***Response:*** In regards to the precautionary principle, if we listed waters on the basis of full scientific certainty, the list would be very short because we would never achieve the level of detailed knowledge needed to assign > 99% certainty to our conclusions. If we listed based only on a strict interpretation of the precautionary principle we would *a priori* list all waters in the state because all waters are potentially subject to degradation by polluted runoff from poorly-managed land-use practices. We must apply a process for rational evaluation of existing data that will result in protecting the resource at a reasonable level of scientific certainty. Because the List is revised once per two years, water quality variations will be described in more detail as data accumulate over time, with a resultant increase in certainty. We have considered the public trust doctrine in light of the limits to which the existing data support reasonable listing decisions.

Comment 1.9 *"EPA's regulations implementing section 303(d) of the Clean Water Act, require that, among other things, a 303(d) list 'include a priority ranking for all listed water quality-limited segments still requiring TMDLs…' 40 CFR § 130.7(b)(4). Moreover, those regulations mandate that '[t]he priority rankings shall specifically include the identification of waters targeted for TMDL development within the next two years.'…Moreover, the Coalition and the Center ask that DOH provide more detail regarding its priority ranking, including explanations of why the rankings of various waters were changed."*

> ***Response:*** DOH has explicitly named the TMDLs scheduled for development in the next two years within the final Impaired Waters report (see page 25, paragraph 2 of the Report for a discussion of TMDL priorities in 2003-2004).

Comment 1.10 *"The public comment period was a sham."*

> ***Response:*** DOH disagrees with the statement that "the public comment period was a sham." DOH made a sincere effort to meaningfully involve the public. DOH published a "Call for Data" for the list in August 2001. DOH contacted agencies, community groups, universities, etc. for data and input on the list. A press release was issued on August 30, 2002. Advertisements were placed in the legal notice sections of newspapers throughout the state on from August 27-29, 2002. The size of these ads was increased from the standard size where possible in order to gain more exposure. The draft report was published on our website and mailed, emailed or faxed to anyone requesting the document. DOH staff quickly responded to any inquiries about the list. DOH requested an extension of the October 1, 2002 List deadline to October 15, 2002 in order to allow adequate time to respond to public comments and address any inconsistencies in the report. The public comment period was advertised through email distribution lists such as the TMDL working group and Coastal Zone Advisory Group (MACZAC) attached to CZM.

Comment 1.11 *"The format of the list is confusing, and typos and misspellings of waterbody names compound that confusion…Finally, the Coalition and the Center ask that, in the final 303(d) list and future listing efforts, DOH use [macron] and [glottal stop] in all Hawaiian words."*

> ***Response:*** All cited typos and misspellings were corrected in DOH's final version of the list. Because controversy exists as to the correct pronunciation of many of the waterbody names, DOH has opted to leave out macrons and glottal stops on the basis that we have no guide to the correct use of the marks with these names,

Commenter 2: Janet Ashman, Hawaii Agriculture Research Center (HARC), Letter dated September 30, 2002

Comment 2.1 *"We are concerned with the trend indicated by the additional listings proposed in the Draft Report and EPA's addition of 92 waters to the 1998 list as a result of the Hihiwai lawsuit, that all data,* ***despite its relevance and representativeness****, is being considered to determine impairment."*

> ***Response:*** All readily available data must be considered during the listing/delisting process; however, only data that met our requirements for data quality and sample size were utilized to make a listing/delisting decision. Basic quality control procedures are described in the QA/QC plans used by an organization, one of which is general (the Quality Management Plan), and the other is project-specific (the Quality Assurance Project Plan). Qualified staff prepare or review both Quality Assurance and Quality Control (QA/QC) plans and sampling plans, which are site-specific by definition. DOH has an EPA-approved set of QA/QC plans; other agencies have similar plans. Please note that QA/QC guarantees only that data are of known quality and are related to program needs, not that all data are of equally high quality for all purposes.

Comment 2.2 *"…the ramifications of listing a particular stream or coastal segment include the mandatory computation of TMDLs and attendant potentially negative consequences for landowners and users…"*

> ***Response:*** DOH disagrees with HARC's statement that TMDLs lead primarily to "attendant negative consequences for landowners and users". Water quality improvement projects are underway nationwide as a means of ensuring that designated uses are supported for a variety of users and that water quality decisions do not consistently favor any single special interest group.

Comment 2.3 *"HARC is also concerned that the data provided by limited samples from discrete locations of a waterbody may be used far beyond what can reasonably be extrapolated to characterize an entire stream."*

> ***Response:*** Tributary streams have an effect on pollutant loads in lower reaches that must be considered in the listing decision. Only in instances where data exist showing that tributaries do not contribute to the pollutant load, or if only an upper reach station is exceeding water quality standards, is the listing of an entire stream system questionable. DOH requires photographic and written descriptions as well as numeric data to help determine whether sources from tributary streams are contributing to the pollutant load.

Comment 2.4 *"In Hawaii, we are fortunate that our stream and coastal water quality are generally good."*

> ***Response:*** We disagree with your statement that "our stream and coastal water quality are generally good." In Hawaii, streams, especially, have been historically degraded by habitat destruction, channelization, and polluted runoff of nutrients, sediments and toxic materials. If water quality of discharges from streams and storm drains into the coastal ocean is poor, then nearshore coastal water quality around those discharge points will likely also be poor. If water quality were generally "good," Hawaii would not have such a long 303(d) List.

Comment 2.5 *"Our pollution 'impairment' is usually more related to turbidity and nutrient levels than toxic substances and sewage."*

> **Response:** Regarding toxic substances, we have barely begun to test for these materials, but find them when these tests are run, such as in studies recently conducted by the United States Geological Survey (Anthony 1998; Brasher and Anthony 2000). Please note that absence of evidence is not evidence of absence of an effect.

Comment 2.6 *"… listing decisions should be based on impairment of water quality that is caused by controllable, economically correctable, anthropogenic sources, not on these natural pollutant inputs associated with flashy flows and highly erodable lands within upper watershed areas. Does HIDOH have a method of subtracting out these inputs, and if so, how and at what stage of the process does this occur?"*

Response: Water Quality Standards were set at a level that takes background levels of materials (excluding man-made chemicals) into account. The criteria for Hawaii were purposefully set using wet, dry, and 2% and 10% geometric standards to accommodate differences in topography, elevation and exposure. Measurements of pollutant loads made during the TMDL process allow more explicit estimation of background loads.

Comment 2.7 *"HARC is also very concerned with and requests clarification regarding the process for listing/delisting based on narrative criteria…What is the correlation necessary between the 'HIDOH approved habitat or biological assessments' and the narrative criteria in HAR 11-54-04? What is the process whereby an assessment protocol is approved? …(protocols) do not meet the level of scientific validity necessary for that use."*

Response: Currently, DOH is using a scoring system developed by EPA for the narrative criteria, which was adapted from the NRCS Visual Protocol and is applicable to all narrative descriptions obtained from field work. The process by which we evaluate protocols is to review the methodology and the QA/QC plan; evaluate results against the narrative Water Quality Standards (WQS) criteria; then, if the protocol will be applied by DOH staff, incorporate it into the DOH Quality Management Plan, which is approved by EPA. Please refer to the flow chart on page 10 of the Report for details of the decision-making process for listing/delisting using narrative criteria.

The "level of scientific validity" is established by the use of carefully described methodologies and QA/QC procedures. Because science proceeds in a point-counterpoint manner, controversy over methodologies will always exist. Although there is argument over whether a metrics-based approach is appropriate for Hawaii's streams, we have not been able to adequately evaluate other approaches because of lack of field manuals and QA/QC plans. In other words, we have too little information to evaluate data quality and relevance of these other approaches to DOH water quality management needs. Peer-reviewed publications are often not detailed enough to allow field implementation of methods. The peer review process provides opportunity for qualified reviewers to evaluate whether the methodology is appropriate to answer the question and whether conclusions are correctly drawn from information presented; it does not replace the need for more detailed information when comparing methodologies. We are able to use the HSBP for water pollution/land use impact evaluations; these elements are missing from other approaches applied to the State's streams. The HSBP meets our program needs while other protocols meet the needs of other programs, but differences of opinion regarding the general applicability of any particular protocol are not sufficient to invalidate a methodology for specific uses.

Please remember that the List is a screening tool, redone once per 2 years, and not a final analytical result for any waterbody.

Commenter 3: Edward Laws, Letter dated September 29, 2002

Comment 3.1 *"I do not think the failure of the CWB to document where they sampled should be an acceptable excuse for leaving…sites off the list."*

> ***Response:*** The listing exercise occurs biennially; this List should be viewed as part of a continuing work project. These unlisted streams will be added to the monitoring list for consideration in 2004. The Environmental Planning Office is only required to review existing and readily available information [see 40 CFR § 130.7(b)(5)]. Our data quality requirements include photographic and written documentation of the sites. This information is necessary to determine where and if water quality standards (WQSs) are being exceeded.

Comment 3.2. *"The geometric mean and the median are not the same statistic."*

> ***Response:*** DOH apologizes for the confusion. DOH will reword the document to accurately reflect that geometric means were computed for entire data sets and compared to the geometric mean Water Quality Standard for the corresponding parameter.

Comment 3.3. *"The DOH should really ask itself what sort of type I or type II error rates it is willing to accept and choose a minimum sample size accordingly."*

> ***Response:*** To minimize Type I and II error rates, DOH set the minimum sample size for the 10% criterion at 100 and the minimum sample size for the 2% criterion at 500. DOH will reword the document to clearly reflect this.

Comment 3.4. *"The text on page 6 reads, 'For toxic pollutants such as pesticides and heavy metals, which often require expensive analyses, a minimum sample size of three is required for eligibility for Listing Priority 1.' What is the basis for choosing a minimum sample size of three? It would appear that this minimum sample size was chosen based on cost considerations. What would the minimum sample size be if cost were not a consideration? In all cases, what is the scientific rationale for the selection of a particular minimum sample size? As things stand, the values chosen for minimum sample size are not defended with any scientific rationale and hence appear arbitrary."*

> ***Response:*** The minimum sample size for toxic pollutants was chosen as a balance between the minimum sample size necessary to compute a geometric mean value and cost. Because DOH lacks the resources to gain full scientific certainty regarding risk levels for every pollutant in every State waterbody, DOH must make choices to protect human and ecological health. The scientific rationale for minimum sample sizes is based on practical considerations; otherwise, DOH would use site-specific standard deviations for each parameter to compute sample sizes needed to determine if statistically significant seasonal variations or long-term time trends exist at each site and would, therefore, have no list or a very short list due to lack of adequate data. The minimum sample sizes are set along with requirements for photographic and written documentation that help us establish only whether a waterbody exceeds the water quality standards within a defined

time frame. The minimum sample size requirement represents a screening tool, not a final analytical result, which can be obtained only with larger sample sizes and a broader assessment of each waterbody. More detailed assessments are made during Total Maximum Daily Load studies.

Comment 3.5. *"In the case of waterbodies with 5-9 samples (Priority 2 category), there is a discrepancy between the text on page 8 and Fig. 1 on page 9. The text on page 8 says, 'The geometric mean was calculated to determine whether the corresponding standard was exceeded by a factor of 2.' Fig. 1 says 'Do the majority of sample values exceed the corresponding WQS by a factor of 2 or more?'…Furthermore, absolutely no basis is given for using a factor of 2 as the margin of error in the calculations."*

Response: The language in Figure 1 will be changed to "Does the geometric mean of sample values exceed the corresponding WQS by a factor of 2?" The factor of 2 was selected for consistency with EPA's approach to the 2001 revised List (see also EPA, 1997 and EPA, 2002), and was used to evaluate individual exceedances for listing purposes.

Comment 3.6 *"The words 'distributed across the waterbody' need to be defined in a way that would allow a person collecting samples to devise a sampling strategy that would meet the criterion."*

Response: *"Distributed across the waterbody"* means random sample points on the surface and above the bottom, or sampling along transects. Many sites are too shallow for top/bottom water column sampling, and support only surface sampling plans.

Commenter 4: Linnel Nishioka, Commission on Water Resource Management, Department of Land and Natural Resources, State of Hawaii, Letter dated September 30, 2002

Comment 4.1 *"We note that the submission deadline for the 2002 List of Water-Quality Limited Segments to the [EPA] is October 1, 2002…Given the short time frame, how will the comments submitted by agencies/individuals be incorporated into the listing/comments submitted to EPA?"*

Response: An extension has been granted until October 15, 2002 (see response to Comment 1.10).

Comment 4.2 *"It should be noted, or identified in subsequent TMDL analyses, that some streams may have naturally occurring high turbidity levels."*

Response: The Water Quality Standards and Total Maximum Daily Loads (TMDLs) consider natural background levels of pollutants (see response to Comment 2.6).

Comment 4.3 Being that "trash" is considered a pollutant, how is the presence of "trash" in a waterbody quantified and/or qualified to determine impaired water status?

***Response*:** Listings for 'trash" are based on visual assessments that meet data quality and quantity requirements. DOH utilizes the Hawaii NRCS Visual Assessment Protocol for this work (NRCS 2001). The only listings for trash are the ones added by EPA to the 2001 revised List; new listings will need to meet DOH's minimal data requirements for listing/delisting.

Comment 4.4 *"Page 18, 3rd paragraph…should be corrected to read 'Maliko stream on [Oahu]Maui, and Wailele stream on [Maui]]Oahu.'"*

***Response*:** The typographical was error corrected.

Comment 4.5 *"Page 25, line 12: The spelling…should be corrected to read 'Huleia.'"*

Response: The typographical error was corrected.

Comment 4.6 *"Table 7, page 28, line 4…Is [Pacific Ocean] correct/consistent with the other waterbody descriptions listed in Table 7?*

***Response*:** Pacific Ocean is the correct "listed waterbody" while the "geographic scope" of that listing is only the Clean Water Branch's Vacationland Station. If a specific area of the Pacific was identifiable, such as a beach recreation area, that reference was used for the waterbody. In this case, there was no such marker.

Comment 4.7 *"Table 7, page 31, line 3: The Station ID for Kahana Stream should be revised to read 6-1-08 (as opposed to 3-1-18). The other Station ID numbers should be verified for accuracy prior to submission to EPA"*

***Response*:** The typographical error was corrected, and the other station IDs were double-checked against the Hawaii Stream Assessment (COWRM and NPS 1990).

Comment 4.8 *"Under Appendix C…stations are defined as needing additional monitoring…What is being done to facilitate data collection for these sites and what measures will be taken to rectify the lack of samples?"*

Response: These sites will be incorporated into the Clean Water Branch's monitoring plans. In fact, some of these sites have already been scheduled for monitoring this wet season. DOH would like to coordinate with your agency in determining the intermittent nature of some of these streams and would like to share any information that we collect with regards to this issue.

Comment 4.9 *"We would like to note that the Commission…is presently undertaking the formal establishment of a statewide watershed and stream coding system…the Commission would like to meet at a mutually convenient opportunity to brief your staff on this coding system such that we may better coordinate and integrate our respective program efforts."*

Response: DOH would be happy to meet with COWRM employees for a briefing on your coding system and support the effort to "integrate our respective program efforts." DOH will contact you regarding such a meeting in late October or early November.

Commenter 5: Timothy Steinberger, Department of Environmental Services, City and County of Honolulu, Letter dated September 27, 2002

Comment 5.1 *"How were [the streams listed based on visual assessment] on Oahu considered for listing?"*

Response: The streams listed on the basis of visual assessments were all listed by EPA in 2001, using a scoring system based on the NRCS Visual Assessment Protocol, 2001. These waters will be retained on the List until minimum data requirements are met, which will trigger a new listing/delisting decision.

Comment 5.2 *"Since streams can be listed by using visual assessment, can they be delisted using visual assessment?"*

Response: Yes, the listing and delisting criteria are the same.

Comment 5.3 *"Have any streams on Oahu been identified as not impaired?"*

Response: The CWA 303(d) List only identifies waterbodies that are impaired; however, as data become available from more streams in less developed areas we will be able to compile a list of unimpaired streams as well.

Comment 5.4 *"What was the selection process used for listing coastal waters?…[NRDC] listed Mailiili Beach as one of the nation's 'seventy dirtiest beaches'…Was Mailiili Beach considered for listing?"*

Response: The selection process used for listing coastal waters was the same for as for all other types of waterbodies. This process is detailed in Appendix A of the 2002 Impaired Waters Report. Mailiili Stream was not considered for inclusion in the 2002 303(d) List because no data were available for review. DOH will schedule this stream for future monitoring in light of the impairment questions raised by NRDC.

Comment 5.5 *The basis for setting priorities seem to be heavily weighted towards the number of samples taken for that water body. How are public health, impact on aquatic species, and cost addressed in setting priorities? For instance, why are Kapaa Stream and Kawa Stream listed as high priorities, while Waikiki Beach and Ala Moana Beach Park listed as low priorities?"*

***Response*:** Public health, ecological and economic concerns are all considered in both the development of monitoring plans and prioritization for TMDLs. In the case of Kapaa and Kawa Streams, these waterbodies were addressed prior to the cited recreational beach

areas because inland waters are major source of coastal pollution. DOH places a higher priority on addressing inland waters in order to lessen overall pollution impacts from streams and storm drains discharging into coastal waters. The more costly and complex TMDLs for tidally influenced waters will be carried out after the impacts of inland waters on these sites have been identified.

Commenter 6: Susan Burr, Aecos, Inc., Letter dated September 30, 2002

Comment 6.1 *If three samples are adequate to determine compliance with the single-number toxic pollutant criteria, you should clarify whether three or ten samples are required to evaluate compliance with the conventional pollutants criteria that are based on geometric mean values (i.e., pH, dissolved oxygen, temperature, and specific conductance).*

Response: The sample size for conventional pollutants is ten, but because these parameters are defined relative to "ambient conditions," DOH needs more extensive data sets to identify what these benchmark conditions are, especially in stream systems.

Comment 6.2 *"It appears that temperature was not evaluated as a listing criterion for the 2002 report, despite the fact that many of the state's streams are likely to be impaired by temperature."*

Response: DOH has insufficient data for streams to identify ambient water conditions at different locations throughout the State. Data collection on one or two days is not sufficient to define "ambient conditions" at a site, considering the environmental variability in Hawaii. DOH is building data sets to address these conditions in the future.

Comment 6.3 *"I suggest that you change the methodology that requires at least three sampling events in the data sets for the evaluation of narrative criteria…to a methodology that requires the data sets to include at least one sampling event from both the dry season and the wet season."*

Response: DOH does requires "at least one sampling event from both the dry season and the wet season." DOH also requires an additional sampling event to better account for environmental variability.

Comment 6.4 *"AECOS, Inc. has prepared a Water Quality References Directory (CZMWQDIR) under contract to Hawaii's Coastal Zone Management office…The directory will be accessible on the internet very soon. The directory is likely to be useful to the Environmental Planning Office to increase the amount of data sources to review for future 303(d) lists."*

Response: Thank you for the information. When the directory becomes available DOH will consult it for the next 303(d) List

Comment 6.5 *The list of streams assessed by AECOS, Inc. on page 12 is incorrect…Table 4 also includes incorrect stream names.*

Response: These names will be corrected in consultation with AECOS.

Comment 6.6 *"The biological assessments conducted by the Environmental Planning Office (Waimanalo Stream, Kawa Stream, and Kaneohe Stream) should also be evaluated."*

Response: These streams are already listed, and TMDL reports either approved by EPA (Waimanalo and Kawa Streams) or almost completed (Kaneohe Stream). The bioassessments were only conducted during a single season and therefore do not meet the listing/delisting criteria. This information will be noted in the Final Impaired Waters Report. Also, the Environmental Planning Office has not yet approved the Kaneohe Stream Bioassessment.

Comment 6.7 *"On page 17 you state that HIDOH Clean Water Branch could not produce photographs and written descriptions…EPO and CWB staff should be able to spend a day together documenting these sites so that the data collected over the past year or so will be eligible to be evaluated for listing in 2002…Also, AECOS, Inc. may have photographs of these locations in digital format that we would gladly provide without cost to the State."*

Response: When this information becomes available, DOH will compile it for use in developing the next list.

Comment 6.8 *"Page 20 incorrectly states that AECOS, Inc. visual assessment surveys were conducted in both the wet and dry seasons. The surveys were only conducted in the dry season."*

Response: The typographical error was corrected.

Comment 6.9 *"On page 20, Kahawainui is misspelled and Kawainui Stream is incorrectly listed as being tributary to Anahulu."*

Response: The error was corrected in the report.

Comment 6.10 *"Many of AECOS, Inc. visual assessment surveys were conducted at CWB monitoring locations…it would be logical to evaluate the visual assessment results in conjunction with the water quality data collected by the CWB to make a listing/delisting decision."*

***Response*:** The visual assessments were evaluated in conjunction with water chemistry data; however, the standard number of samples required for listing/delisting does not change. Because we have a visual assessment does not mean we can make a decision based on a lower sample size than our criteria requires...and vice versa. In no case, were there enough visual assessments to meet the standard of three samples, including sampling from both the wet and dry seasons.

Comment 6.11 *"Based upon USGS maps, local knowledge and history, and water quality data, the names 'Kiikii' and 'Paukauila' should really apply only to the estuarine portions of those systems. So, for example, in Table 4 it is inaccurate to state, "Need visual assessment for lower freshwater segment" for Paukauila. EPO should consider separately evaluating for listing/delisting purposes, the streams of the following seven stream systems: Wailua (Kauai), Waimea (Kauai), Kahaluu (Oahu), Ala Wai Canal System (Oahu), Paukauila (Oahu), and Anahulu (Oahu), as was done for Kahaluu Stream System.*

Response: For convenience, DOH applies the name of the stream segment discharging into coastal waters to entire stream systems. Additional evaluations in the future may reveal that TMDLs should be completed only for specific tributaries; however, the watershed approach is being applied here in order to protect State waters.

Comment 6.12 *"The Visual Assessment findings for the Big Island's Hamakua Coast streams do not necessarily 'contradict' or 'severely contradict' the 1998 listings. There has been a change in land use (virtual elimination of sugar cane cultivation) along the Hamakua Coast, which may have resulted in an improvement of water quality. The word 'contradict' implies that one or the other assessment was correct."*

Response: The fact that differing results in the assessments may have been due to land use changes will be reflected in the report.

Comment 6.13 *"The Visual Assessment survey of Hanapepe Lower was conducted in the estuarine portion of the river."*

Response: The location of the Hanapepe Lower visual assessment will be corrected in the Impaired Waters Report.

Commenter 7: Andrew Lincoff, Letter dated September 23, 2002

Comment 7.1 *" I would like to propose Wahiawa Reservoir and north, south and main forks of Kaukonahua Stream for inclusion on the impaired waterbodies list."*

Response: The anecdotal evidence provided in your letter is not enough to meet DOH's criteria for listing/delisting. If you can suggest sources of data for the next listing cycle, DOH would be happy to review that data. At the present time, Kaukonahua Stream and Wahiawa Reservoir are both listed by visual assessment for nutrients and turbidity as part of the Kiikii Stream System.

Commenter 8: Susan Miller, Memo dated September 30, 2002

Comment 8.1 *"p.17: code NE is used in Table 2 without a key showing meaning, although it is keyed out in connection with Table 3"*

Response: The typographical error was corrected.

Comment 8.2 *"p. 21: Table 4, row for Station No. 8-2-60 – should "contradicts" in last cell be singular?"*

Response: This language has been changed (see response to Comment 6.12).

Comment 8.3 *"p. 25: The first sentence 'The 2002 303(d) List has grown with HIDOH adding twenty-three new waterbodies to the List: seven streams and sixteen coastal waters.' isn't really clear regarding from which list the 2002 list 'has grown'. The next sentence begins 'The List of Impaired Waters includes all of the waterbodies on EPA's revised List of Impaired Waterbodies', which infers but does not make clear that EPA's revised list is the base list. (The same two sentences appear at least once elsewhere in the draft document.)"*

Response: This sentence has been changed for clarification within the final Impaired Waters report.

Comment 8.4 *"p.25: Huleia is misspelled 'Hulei' in the 12th line"*

Response: The typographical error has been corrected.

Comment 8.5 *"p.25: Are the 'Factors considered for prioritization…' in priority order?"*

Response: No, the factors are in random order.

Comment 8.6 *"Appendix C is a very useful document. Do the station numbers associate with particular islands, as they appear to? If so, I believe it would be helpful to include that key at the head of the appendix…"*

Response: A key has been added (see response to Comment 1.4).

Comment 8.7 *"I have been told (by C&C Dept. of Design & Construction personnel, for example) that if a waterbody is listed on the 303(d) list, DOH will not give a permit for additional discharge into that waterbody. If this is an accurate statement, I believe it should be included somewhere in this document."*

Response: DOH disagrees with this statement; additional discharges are allowed provided that they do not further degrade the water quality in a listed waterbody. Any permitted discharges will be assigned pollutant load allocations at the time that TMDLs are prepared.

Commenter 9: Thomas Young, Hawaii Association of Conservation Districts, Letter dated September 30, 2002

Comment 9.1 *" The Hawaii Island Soil and Water Conservation District has the following [concern] on the current listing…Use of new pollutants specifically turbidity in streams on the Big Island."*

> ***Response:*** Turbidity is not a "new" pollutant. It is an existing Water Quality Standard under HAR 11-54 that must be met.

Comment 9.2 *"Turbidity is being caused in the upper reaches of the watershed in the Conservation Districts."*

> ***Response:*** Some of the causes of turbidity result from erosion of land in the Conservation Districts. However, the portion of this pollution, which is natural background, is calculated into the Water Quality Standards and as a part of the TMDLs (see response to Comment 2.6).

Comment 9.3 *"The turbidity from Conservation Districts should be considered background and a formula should factor out this naturally caused pollutant."*

> ***Response:*** See response to Comments 9.2 and 2.6.

Comment 9.4 *"Storm events produce large amounts of turbidity, which are carried to the lower reaches where they are deposited and add to minor event's turbidity."*

> ***Response:*** Turbidity caused by storm events is calculated into the Water Quality Standards (See response to Comment 2.6).

Comment 9.5 *"The districts have a long history of mitigating soil loss thus lessening turbidity."*

> ***Response:*** DOH appreciates this mitigation. Depending on the outcome of TMDL studies in these streams, DOH may or may not make recommendations for further erosion control actions in specific locations in order to meet stream water quality standards.

Comment 9.6 *"The Hawaii Island Soil and Water Conservation Districts request that you not list these new streams on the 303 D list until a process can be put into place to ensure the naturally occurring pollutants not be factored into – as required in the Clean Water Act."*

> ***Response:*** DOH is not able to fulfill your request because natural background pollutants are already factored into the listing and TMDL development processes (see response to Comments 2.6 and 9.1-9.5).

Commenter 10: Bill White, Wailea Property Owner's Association, Letter dated September 5, 2002

Comment 10.1 *Please be advised that Wailea Bay on the Big Island (also known as Waialea Bay) was devastated by a severe 100 year storm and floo[d] January 26, 2002…Although the Wailea Bay area is a part of the Hapuna Beach Park system, it is a completely separate cove and beach. It should be included in your list of impaired waters.*

Response: Because we do not have enough data to support a listing decision, DOH will conduct monitoring of this waterbody in the future. The anecdotal evidence provided in your letter is not enough to meet DOH's criteria for listing. If you can suggest sources of data for the next listing cycle, DOH would be happy to review that data.

Commenter 11: Andrew Jones, Facsimile dated September 30, 2002

Comment 11.1 *"…a supplemental approach [to listing and prioritization] is suggested: A) Identification of significant reproductive and food-chain habitats, ranked by their importance to the contiguous coastal ecology. B) Identification of marine pollutant sources and the location of input, with ranking by estimated rates of input. C) Review of the latest literature on the chronic and acute effects of these pollutants on the wild species, communities and systems of importance to Hawaii. D) Evaluation of these findings to prioritize remediation."*

Response: DOH appreciates your recommendations for collection of supplemental data and will consider how these types of information can be incorporated into our programs to increase protection of coastal water quality and aquatic resources.

Commenter 12: Carl Berg, Hanalei Heritage River Program, Letter dated September 26, 2002

Comment 12.1 *"…Enterococcus data are provided to support our request that Hanalei Bay and the Hanalei River be reprioritized on the 303(d) list as* ***High Priority*** *for Total Maximum Daily Load (TMDL) development…Our visual assessment of the Hanalei River at the Hanalei Bridge and at Weke Road would also require that they be listed as* ***High priority*** *for turbidity…Using your factors for prioritization, we believe that Hanalei River and Hanalei Landing should be re-prioritized as High priority, based on 2) the multiple uses of the waters, 3) the type and location of the waterbodies, 4) the high degree of public interest, 5) the vulnerability of the waters to bacterial contamination and sedimentation, 6) the importance of these waters to both kama'aina and tourists, and 7) DOH limitations in testing of the waters of the bay for turbidity and the river for both turbidity and Enterococcus bacteria…The Hanalei Heritage River Program is applying for recently announced E.P.A. Watershed Initiative funds. Monies are being requested to contract for TMDL studies for nutrients, total suspended solids, and Enterococcus bacteria in the estuarine portion of the Hanalei River. We request DOH re-prioritize and contract for TMDL studies of the freshwater portion of the Hanalei River…simultaneously"*

Response: For many of the reasons listed above, along with Hanalei River's designation as a National Heritage River, DOH is raising the priority of the Hanalei River and Hanalei Bay to High Priority. However, the timing of the TMDLs will be based on availability of funding from EPA to conduct TMDL studies. This is reflected in the final Impaired Waters report.

Commenter 13: Ray Chuan, Limu Coalition, Email dated September 29, 2002

Comment 13.1 *"The Limu Coalition is pleased to lend its support to the request by the Hanalei Heritage River Program to re-prioritize Hanalei River and Hanalei Bay as High Priority."*

Response: See response to Comment 12.1.

Commenter 14: Hugh Starr, Auku'u Land Consulting, Facsimile dated September 30, 2002

Comment 14.1 *"I am writing in opposition to the proposed listing of Ukumehame Stream on the 2002 List of Impaired Waters in Hawaii. Not enough water sampling data for Ukumehame Stream has been collected in order to yield an accurate and reliable determination of the need for 'Impaired Listing' at this time."*

Response: HIDOH disagrees that that there is not sufficient evidence to list Ukumehame Stream as impaired by turbidity. We have a sample size of 14; all of the dry season sample values (n = 6; geometric mean = 3.2 NTU) exceed the corresponding water quality standard (2.0 NTU), and the sample mean for the wet season samples (6.6 NTU) exceeds the wet season standard of 5.0 NTU. The overall sample geometric mean is 4.8 NTU. Please see page 7 of the Report, which states that "If wet and dry season data are combined because insufficient sample sizes exist to evaluate the standards separately and the geometric mean of these data only exceeds the dry season geomean standard, a majority of the raw data dry season samples must exceed the dry season standard to warrant listing." This procedure was followed for listing Ukumehame Stream for turbidity.

the geometric means of the dry data set is 4.84 NTU compared to the water quality standard of 2.0 (dry season), and

Monitoring by HIDOH Clean Water Branch (CWB) shows exceedances of the Hawaii Water Quality Criteria for turbidity. Please also refer to response to Comments 14.2-14.6.

Comment 14.2 *"…the State's Maui monitoring branch has no record of March 4, 2002 sampling at Ukumehame Stream."*

Response: Environmental Planning Office staff confirmed the sampling event on March 4, 2002 with the HIDOH CWB, Monitoring section's main office on Oahu.

Comment 14.3 *"The State's Maui monitoring branch indicates a Hach turbidity value of 2.80 for the lower sampling on May 20, 2002; the Environmental Planning Office shows 2.85."*

> ***Response:*** Environmental Planning Office staff confirmed the 2.85 value with the HIDOH CWB, Monitoring section's main office on Oahu.

Comment 14.4 *"The Maui monitoring branch indicated that the December 19, 2000 samplings occurred when there was a heavy rainfall event underway. Has the Environmental Planning Office provided an allowance for this storm event?"*

> ***Response:*** The geometric mean standards are set to include environmental variability such as the storm to which you refer

Comment 14.5 *"Please note that there are no indications of weather conditions occurring at the time of the collections. In the future, it would be informative to have this information noted."*

> ***Response:*** EPO staff will pass this information on to the CWB, Monitoring Section.

Comment 14.6 *"Excluding the above-mentioned March 4, 2002 value, there are a total of six water quality samplings for each of the upper and the lower locations of Ukumehame Stream; three samplings occur within the wet season. It is my understanding that a total of 10 samplings are required for a Priority 1 impaired listing. "*

> ***Response:*** Ten samples are required for the entire stream system not individual sites. The data for Ukumehame Stream was combined for both wet and dry standards and evaluated against both standards. When data are combined because of limited data sets, the listing/delisting criteria require that the majority of dry season samples exceed the dry season standard. This procedure was followed for Ukumehame Stream.

Commenter 15: Enchanted Lake Residents Association and multiple similar responses (51) from community members, Letters are dated September 23-24, 2002

Comment 15.1 *"This letter is being written as a request to place the Ka'elepulu Pond and Stream System on a high priority on the State's 303(d) list of polluted waters…"*

> ***Response:*** In response to public comments and environmental conditions, DOH has increased the priority for Ka'elepulu Pond and Stream System to high priority. However, the timing of the TMDLs will be based on availability of funding from EPA to conduct TMDL studies. This is reflected in the final Impaired Waters report.

Aside from comments on the draft list, DOH received the following complaint, which was referred to the appropriate programs:

Commenter 8: Cliff M. Morris, Email dated September 5, 2002

Comment 8.1 *South of the Natural Energy Laboratory of Hawaii in West Hawaii…we have a severe human waste problem with defecation in the tide pools, ocean and land. There is a homeless population consisting of over 30 campgrounds with no facilities. Weekend campers can contribute up to another twenty plus sites… I've literally seen human waste floating in the tide pools. This can't be healthy and I was wondering if you had checked the water quality lately? Can you check the water quality? I believe there is a severe health risk for the citizens of Hawaii*

> ***Response:*** The Mayor of the County of Hawaii and his staff have met with the owners of the affected OOMA and Kohanaiki properties; all parties have agreed to work together with the various property owners in the vicinity to address untreated sewage problems along the coastline.

References

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EPA, 1997. "Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates" EPA-841-B-97-002B, September 1997.

EPA, 2001. "2002 Integrated Water Quality Monitoring and Assessment Report Guidance", Memorandum from Robert Wayland, III, November 19, 2001.

EPA, 2002. "Consolidated Assessment and Listing Methodology" EPA-OWOW, July 2002.

National Research Council (NRC), 2001. "Assessing the TMDL Approach to Water Quality Management" National Research Council, 2001.

Natural Resources Conservation Service (NRCS) – United States Department of Agriculture. 2001. *Hawaii Stream Visual Assessment Protocol: Version 1.0.*